

\* \* \* \* \* STN Columbus \* \* \* \* \*

FILE 'HOME' ENTERED AT 11:57:26 ON 09 APR 2010

=> file caplus

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

0.22

0.22

FILE 'CAPLUS' ENTERED AT 11:58:08 ON 09 APR 2010

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

COPYRIGHT (C) 2010 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 9 Apr 2010 VOL 152 ISS 16

FILE LAST UPDATED: 8 Apr 2010 (20100408/ED)

REVISED CLASS FIELDS (/NCL) LAST RELOADED: Feb 2010

USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Feb 2010

Caplus now includes complete International Patent Classification (IPC) reclassification data for the first quarter of 2010.

CAS Information Use Policies apply and are available at:

<http://www.cas.org/legal/infopolicy.html>

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> e us20070285005/pn

E1 1 US20070285003/PN

E2 1 US20070285004/PN

E3 1 --> US20070285005/PN

E4 1 US20070285006/PN

E5 1 US20070285007/PN

E6 1 US20070285008/PN

E7 1 US20070285009/PN

E8 1 US20070285010/PN

E9 1 US20070285011/PN

E10 1 US20070285012/PN

E11 1 US20070285014/PN

E12 1 US20070285015/PN

=> s e3

L1 1 US20070285005/PN

=> d all

L1 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2010 ACS on STN

AN 2005:1154873 CAPLUS  
 DN 143:429826  
 ED Entered STN: 28 Oct 2005  
 TI Organic electroluminescent device and organic electroluminescent display  
 IN Itai, Yuichiro  
 PA Fujitsu Limited, Japan  
 SO PCT Int. Appl., 32 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 IC ICM H05B033-14  
 ICS H05B033-12; C09K011-06  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 22, 74

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005101911	A1	20051027	WO 2004-JP4662	20040331
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	TW 252051	B	20060321	TW 2004-93108675	20040330
	JP 4438003	B2	20100324	JP 2006-512162	20040331
	US 20070285005	A1	20071213	US 2007-594600	20070608 <--
PRAI	WO 2004-JP4662	A	20040331		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2005101911	IPCI	H05B0033-14 [ICM,7]; H05B0033-12 [ICS,7]; C09K0011-06 [ICS,7]
	IPCR	C09K0011-06 [I,C*]; C09K0011-06 [I,A]; H01L0051-00 [I,C*]; H01L0051-00 [I,A]; H01L0051-50 [I,C*]; H01L0051-50 [I,A]; H05B0033-12 [I,C*]; H05B0033-12 [I,A]; H05B0033-14 [I,C*]; H05B0033-14 [I,A]
	ECLA	H05B033/14; C09K011/06; H01L051/00M6D4; H01L051/50G; H01L051/50K; M09K; M09K; M09K; M09K; M09K; T01L; T01L; T01L
TW 252051	IPCI	H05B0033-00 [ICS,7]; G09F0009-00 [ICS,7]
	IPCR	H05B0033-00 [I,C]; H05B0033-00 [I,A]; C09K0011-06 [I,C*]; C09K0011-06 [I,A]; G09F0009-00 [I,C]; G09F0009-00 [I,A]; H01L0051-00 [I,C*]; H01L0051-00 [I,A]; H01L0051-50 [I,C*]; H01L0051-50 [I,A]; H05B0033-12 [I,C*]; H05B0033-12 [I,A]; H05B0033-14 [I,C*]; H05B0033-14 [I,A]
	ECLA	H05B033/14; C09K011/06; H01L051/00M6D4; H01L051/50G; H01L051/50K; M09K; M09K; M09K; M09K; M09K; T01L; T01L; T01L
JP 4438003	IPCI	H01L0051-50 [I,A]; H05B0033-12 [I,A]; C09K0011-06 [I,A]; G09F0009-30 [I,A]; H01L0027-32 [I,A]; H01L0027-28 [I,C*]
US 20070285005	IPCI	H01J0001-63 [I,A]; H01J0001-00 [I,C*]
	NCL	313/504.000

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB An organic electroluminescent (EL) device comprises an anode, a hole

injection layer, a hole transport layer, a blue light-emitting layer, a hole blocking layer, an electron transport layer, and a cathode formed sequentially on a glass substrate wherein the chromaticity of blue is enhanced while prolonging the lifetime by composing the electron transport layer of an electron transport material and a light-emitting material having a peak wavelength of emission spectrum longer than 555 nm, consuming holes by the light-emitting material and suppressing deterioration of the electron transport material.

ST org electroluminescent device display  
 IT Electroluminescent devices  
     (displays, organic; organic electroluminescent device and organic electroluminescent display)  
 IT Luminescent screens  
     (electroluminescent, organic; organic electroluminescent device and organic electroluminescent display)  
 IT Electroluminescent devices  
     (organic electroluminescent device and organic electroluminescent display)  
 IT 14172-92-0 28755-93-3 790273-07-3  
     RL: DEV (Device component use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)  
     (organic electroluminescent device and organic electroluminescent display)  
 IT 29261-33-4, F4-TCNQ  
     RL: DEV (Device component use); MOA (Modifier or additive use); PRP (Properties); USES (Uses)  
     (organic electroluminescent device and organic electroluminescent display)  
 IT 2085-33-8, Alq3 7429-90-5, Aluminum, properties 7789-24-4, Lithium fluoride, properties 58328-31-7, CBP 123847-85-8,  $\alpha$ -NPD 146162-54-1, BALq 185690-41-9, 2-TNATA  
     RL: DEV (Device component use); PRP (Properties); USES (Uses)  
     (organic electroluminescent device and organic electroluminescent display)  
 RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 RE CITED REFERENCES  
 (1) Chemipro Kasei Kaisha Ltd; JP 08-78163 A 1996 CAPLUS  
 (2) Fujitsu Limited; US 20030157365 A1 2003 CAPLUS  
 (3) Fujitsu Limited; JP 2003234190 A 2003 CAPLUS  
 (4) Idemitsu Kosan Co Ltd; JP 06-207170 A 1994 CAPLUS  
 (5) Idemitsu Kosan Co Ltd; JP 10-3990 A 1998 CAPLUS  
 (6) Oki Electric Industry Co Ltd; JP 10-231479 A 1998 CAPLUS  
 (7) Toray Industries Inc; JP 200263988 A 2002

=> delete select y  
 ALL E# DEFINITIONS DELETED

=> sel ll rn 1-  
 E1 THROUGH E11 ASSIGNED

=> file reg		
COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	6.40	6.62
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	-0.85	-0.85

FILE 'REGISTRY' ENTERED AT 11:58:57 ON 09 APR 2010  
 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
 PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
 COPYRIGHT (C) 2010 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 7 APR 2010 HIGHEST RN 1217434-06-4  
DICTIONARY FILE UPDATES: 7 APR 2010 HIGHEST RN 1217434-06-4

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH January 8, 2010.

Please note that search-term pricing does apply when conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stndoc/properties.html>

=> s e1-e11

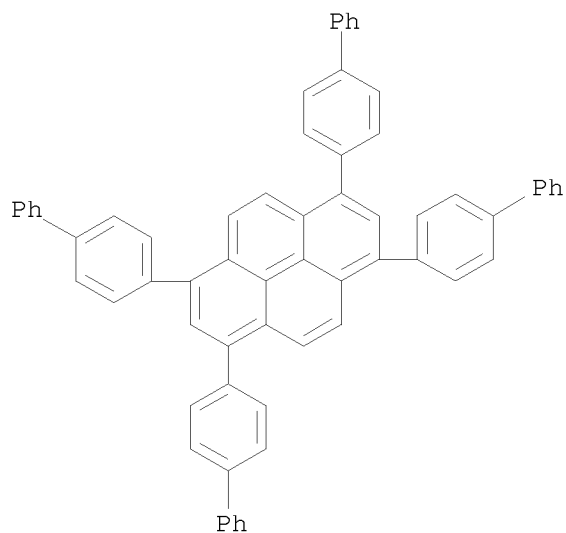
1 123847-85-8/BI  
(123847-85-8/RN)  
1 14172-92-0/BI  
(14172-92-0/RN)  
1 146162-54-1/BI  
(146162-54-1/RN)  
1 185690-41-9/BI  
(185690-41-9/RN)  
1 2085-33-8/BI  
(2085-33-8/RN)  
1 28755-93-3/BI  
(28755-93-3/RN)  
1 29261-33-4/BI  
(29261-33-4/RN)  
1 58328-31-7/BI  
(58328-31-7/RN)  
1 7429-90-5/BI  
(7429-90-5/RN)  
1 7789-24-4/BI  
(7789-24-4/RN)  
1 790273-07-3/BI  
(790273-07-3/RN)

L2 11 (123847-85-8/BI OR 14172-92-0/BI OR 146162-54-1/BI OR 185690-41-9/BI OR 2085-33-8/BI OR 28755-93-3/BI OR 29261-33-4/BI OR 58328-31-7/BI OR 7429-90-5/BI OR 7789-24-4/BI OR 790273-07-3/BI)

=> d ide 1-

YOU HAVE REQUESTED DATA FROM 11 ANSWERS - CONTINUE? Y/(N):y

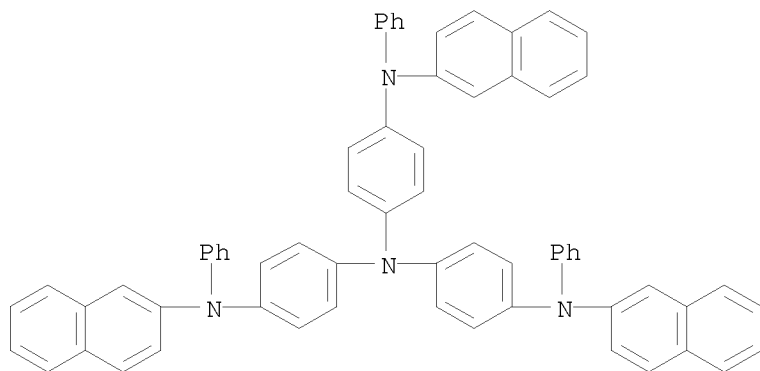
L2 ANSWER 1 OF 11 REGISTRY COPYRIGHT 2010 ACS on STN  
RN 790273-07-3 REGISTRY  
ED Entered STN: 29 Nov 2004  
CN Pyrene, 1,3,6,8-tetrakis([1,1'-biphenyl]-4-yl)- (CA INDEX NAME)  
OTHER NAMES:  
CN 1,3,6,8-Tetra(4-phenylphenyl)pyrene  
MF C64 H42  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

11 REFERENCES IN FILE CA (1907 TO DATE)  
11 REFERENCES IN FILE CAPLUS (1907 TO DATE)

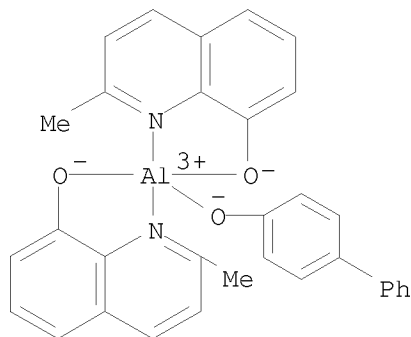
L2 ANSWER 2 OF 11 REGISTRY COPYRIGHT 2010 ACS on STN  
RN 185690-41-9 REGISTRY  
ED Entered STN: 04 Feb 1997  
CN 1,4-Benzenediamine, N1-2-naphthalenyl-N4,N4-bis[4-(2-naphthalenylphenylamino)phenyl]-N1-phenyl- (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN 1,4-Benzenediamine, N-2-naphthalenyl-N',N'-bis[4-(2-naphthalenylphenylamino)phenyl]-N-phenyl- (9CI)  
OTHER NAMES:  
CN 2TNATA  
CN 4,4',4'''-Tris(N-2-naphthyl-N-phenyl-amino)triphenylamine  
CN 4,4',4'''-Tris[2-naphthyl(phenyl)amino]triphenylamine  
CN 4,4',4'''-Tris[N,N-(2-naphthyl)phenylamino]triphenylamine  
MF C66 H48 N4  
CI COM  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT, CHEMCATS, CSCHEM, TOXCENTER, USPAT2, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

315 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 340 REFERENCES IN FILE CAPLUS (1907 TO DATE)

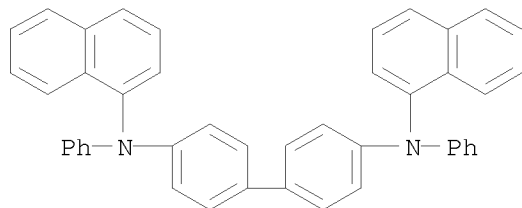
L2 ANSWER 3 OF 11 REGISTRY COPYRIGHT 2010 ACS on STN  
 RN 146162-54-1 REGISTRY  
 ED Entered STN: 25 Feb 1993  
 CN Aluminum, ([1,1'-biphenyl]-4-olato)bis(2-methyl-8-quinolinolato- $\kappa$ N1, $\kappa$ O8)- (9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN Aluminum, ([1,1'-biphenyl]-4-olato)bis(2-methyl-8-quinolinolato-N1,O8)-  
 OTHER NAMES:  
 CN (1,1'-Biphenyl-4'-oxy)bis(8-hydroxy-2-methylquinolinato)aluminum  
 CN (2-Methyl-8-quinolinolato)(4-phenylphenolato)aluminum  
 CN BALq  
 CN BALq3  
 CN Bis(2-methyl-8-quinolinolato)(4-phenylphenolato)aluminum  
 MF C32 H25 Al N2 O3  
 CI CCS  
 SR CA  
 LC STN Files: AGRICOLA, CA, CAPLUS, CASREACT, CHEMCATS, CSCHEM, TOXCENTER, USPAT2, USPATFULL



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

742 REFERENCES IN FILE CA (1907 TO DATE)  
2 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
750 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 4 OF 11 REGISTRY COPYRIGHT 2010 ACS on STN  
RN 123847-85-8 REGISTRY  
ED Entered STN: 17 Nov 1989  
CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4'-di-1-naphthalenyl-N4,N4'-diphenyl-  
(CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-di-1-naphthalenyl-N,N'-diphenyl- (9CI)  
OTHER NAMES:  
CN  $\alpha$ -NPD  
CN 4,4'-Bis[(1-naphthyl)phenylamino]-1,1'-biphenyl  
CN 4,4'-Bis[N-(1-naphthyl)-N-phenylamino]biphenyl  
CN 4,4'-Bis[N-phenyl-N-(1'-naphthyl)amino]biphenyl  
CN 4,4'-Bis[phenyl(naphthalen-1-yl)amino]-1,1'-biphenyl  
CN N,N'-Biphenyl-N,N'-bis(1-naphthyl)[1,1'-biphenyl]-4,4'-diamine  
CN N,N'-Biphenyl-N,N'-bis-(1-naphthenyl)-[1,1'-biphenyl]-4,4'-diamine  
CN N,N'-Bis( $\alpha$ -naphthyl)-N,N'-diphenyl-1,1'-biphenyl-4,4'-diamine  
CN N,N'-Bis( $\alpha$ -naphthyl)-N,N'-diphenylbenzidine  
CN N,N'-Bis(1-naphthyl)-N,N'-diphenyl-1,1'-biphenyl-4,4'-diamine  
CN N,N'-Bis(1-naphthyl)-N,N'-diphenyl-4,4'-benzidine  
CN N,N'-Bis(naphthalen-1-yl)-N,N'-diphenylbenzidine  
CN N,N'-Di(1-naphthyl)-N,N'-diphenyl-4,4'-diaminobiphenyl  
CN N,N'-Di(naphthalen-1-yl)-N,N'-diphenylbenzidine  
CN N,N'-Di(naphthalen-1-yl)-N,N'-diphenylbenzidine  
CN N,N'-Di-1-naphthyl-N,N'-diphenylbenzidine  
CN N,N'-Diphenyl-N,N'-bis( $\alpha$ -naphthyl)-1,1'-biphenyl-4,4'-diamine  
CN N,N'-Diphenyl-N,N'-bis(1-naphthyl)-1,1'-biphenyl-4,4'-diamine  
CN N,N'-Diphenyl-N,N'-di(1-naphthyl)benzidine  
CN N,N-Bis(1-naphthyl)-N,N'-diphenyl-1,1'-biphenyl-4,4'-diamine  
CN NPB  
CN NPB (photoreceptor)  
CN NPD  
CN ST 16/7  
MF C44 H32 N2  
CI COM  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT, CHEMCATS, CSCHEM, TOXCENTER, USPAT2,  
USPATFULL

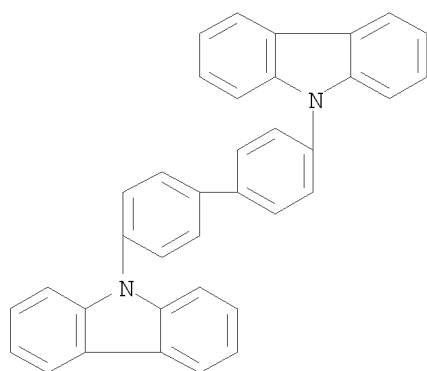


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

5224 REFERENCES IN FILE CA (1907 TO DATE)  
15 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
5371 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 5 OF 11 REGISTRY COPYRIGHT 2010 ACS on STN

RN 58328-31-7 REGISTRY  
 ED Entered STN: 16 Nov 1984  
 CN 9H-Carbazole, 9,9'-[1,1'-biphenyl]-4,4'-diylbis- (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN Carbazole, 9,9'-(4,4'-biphenylene)di- (6CI)  
 OTHER NAMES:  
 CN 4,4'-Bis(carbazol-9-yl)biphenyl  
 CN 4,4'-Bis(N-carbazole)biphenyl  
 CN 4,4'-Bis(N-carbazolyl)-1,1'-biphenyl  
 CN 4,4'-Bis(N-carbazolyl)biphenyl  
 CN 4,4'-Biscarbazolylbiphenyl  
 CN 4,4'-Di(N-carbazole)-1,1'-biphenyl  
 CN 4,4'-Di(N-carbazolyl)biphenyl  
 CN 4,4'-N,N'-Dicarbazolylbiphenyl  
 CN CBP  
 CN CBP (dye)  
 CN CPB  
 CN DCBP  
 CN DCBP (charge transfer agent)  
 DR 958890-11-4  
 MF C36 H24 N2  
 CI COM  
 LC STN Files: BEILSTEIN\*, CA, CAPLUS, CASREACT, CHEMCATS, CSCHEM,  
 TOXCENTER, USPAT2, USPATFULL  
 (\*File contains numerically searchable property data)



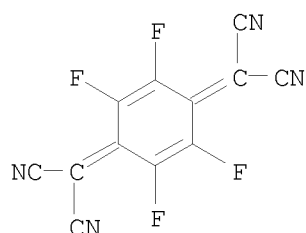
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1520 REFERENCES IN FILE CA (1907 TO DATE)  
 19 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 1594 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 6 OF 11 REGISTRY COPYRIGHT 2010 ACS on STN  
 RN 29261-33-4 REGISTRY  
 ED Entered STN: 16 Nov 1984  
 CN Propanedinitrile, 2,2'-(2,3,5,6-tetrafluoro-2,5-cyclohexadiene-1,4-diylidene)bis- (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN 2,5-Cyclohexadiene- $\Delta$ 1, $\alpha$ :4, $\alpha'$ -dimalononitrile,  
 2,3,5,6-tetrafluoro- (8CI)  
 OTHER NAMES:  
 CN 2,3,5,6-Tetrafluoro-7,7,8,8-tetracyano-p-quinodimethane



CN 2,3,5,6-Tetrafluoro-7,7,8,8-tetracyanoquinodimethane  
 CN 7,7,8,8-Tetracyano-2,3,5,6-tetrafluoroquinodimethane  
 CN F4-TCNQ  
 CN Perfluoro-7,7,8,8-tetracyano-p-quinodimethane  
 CN Perfluoro-TCNQ  
 CN Perfluorotetracyano-p-quinodimethane  
 CN TCNQF4  
 CN Tetrafluoro-TCNQ  
 CN Tetrafluorotetracyano-p-quinodimethane  
 CN Tetrafluorotetracyanoquinodimethane  
 MF C12 F4 N4  
 CI COM  
 LC STN Files: BEILSTEIN\*, BIOSIS, CA, CAPLUS, CASREACT, CHEMCATS,  
 CHEMINFORMRX, CIN, CSCHEM, GMELIN\*, IFICDB, IFIPAT, IFIUDB, MSDS-OHS,  
 PROMT, TOXCENTER, USPAT2, USPATFULL, USPATOLD  
 (\*File contains numerically searchable property data)



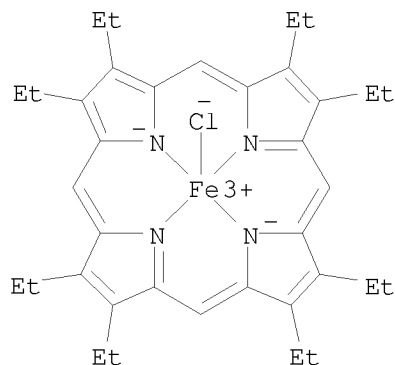
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

562 REFERENCES IN FILE CA (1907 TO DATE)  
 14 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 576 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 7 OF 11 REGISTRY COPYRIGHT 2010 ACS on STN  
 RN 28755-93-3 REGISTRY  
 ED Entered STN: 16 Nov 1984  
 CN Iron, chloro[2,3,7,8,12,13,17,18-octaethyl-21H,23H-porphinato(2-)-  
 κN21,κN22,κN23,κN24]-, (SP-5-12)- (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN 21H,23H-Porphine, 2,3,7,8,12,13,17,18-octaethyl-, iron complex  
 CN 21H,23H-Porphine, iron deriv.  
 CN Iron, chloro[2,3,7,8,12,13,17,18-octaethyl-21H,23H-porphinato(2-)-  
 N21,N22,N23,N24]-, (SP-5-12)-  
 CN Iron, chloro[2,3,7,8,12,13,17,18-octaethylporphinato(2-)]- (8CI)  
 OTHER NAMES:  
 CN 2,3,7,8,12,13,17,18-Octaethyl porphine iron(III) chloride  
 CN Chloro(2,3,7,8,12,13,17,18-octaethylporphyrinato)iron  
 CN Chloro(2,3,7,8,12,13,17,18-octaethylporphyrinato)iron(III)  
 CN Chloro(octaethylporphinato)iron  
 CN Chloro(octaethylporphyrinato)iron  
 CN Iron octaethylporphyrin chloride  
 CN Iron(III) octaethylporphyrin chloride  
 CN Octaethylporphyrinatoiron(III) chloride  
 DR 25442-51-7, 72432-22-5  
 MF C36 H44 Cl Fe N4  
 CI CCS, COM  
 LC STN Files: CA, CAPLUS, CASREACT, CHEMCATS, CSCHEM, GMELIN\*, MSDS-OHS,

TOXCENTER, USPATFULL

(\*File contains numerically searchable property data)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

213 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

213 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 8 OF 11 REGISTRY COPYRIGHT 2010 ACS on STN

RN 14172-92-0 REGISTRY

ED Entered STN: 16 Nov 1984

CN Nickel, [5,10,15,20-tetraphenyl-21H,23H-porphinato(2-)-  
κN21,κN22,κN23,κN24]-, (SP-4-1)-(9CI) (CA INDEX  
NAME)

OTHER CA INDEX NAMES:

CN 21H,23H-Porphine, 5,10,15,20-tetraphenyl-, nickel complex

CN 21H,23H-Porphine, nickel deriv.

CN Nickel, [α,β,γ,δ-tetraphenylporphinato(2-)]- (7CI)

CN Nickel, [5,10,15,20-tetraphenyl-21H,23H-porphinato(2-)-N21,N22,N23,N24]-,  
(SP-4-1)-

CN Nickel, [5,10,15,20-tetraphenylporphinato(2-)]- (8CI)

CN Porphine, α,β,γ,δ-tetraphenyl-, Ni deriv. (6CI)

OTHER NAMES:

CN (5,10,15,20-Tetraphenylporphyrinato)nickel

CN (meso-Tetraphenylporphinato)nickel

CN (meso-Tetraphenylporphinato)nickel(II)

CN (meso-Tetraphenylporphyrinato)nickel

CN (Tetraphenylporphyrinato)nickel

CN Nickel 5,10,15,20-tetraphenyl-21H,23H-porphyrin

CN Nickel 5,10,15,20-tetraphenylporphyrin

CN Nickel meso-tetraphenylporphyrin

CN Nickel tetraphenylporphine

CN Nickel tetraphenylporphyrin

CN Nickel(II) 5,10,15,20-tetraphenylporphine

CN Nickel(II) meso-tetraphenylporphyrin

CN Nickel(II) tetraphenylporphyrin

CN Tetraphenylporphine nickel complex

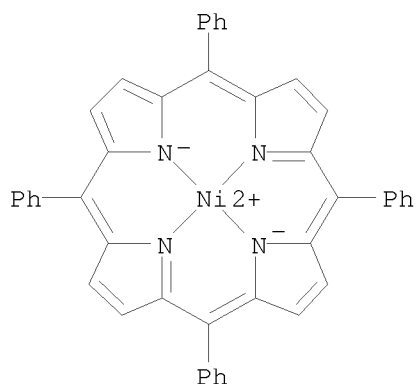
CN [5,10,15,20-Tetraphenylporphinato(2-)]nickel

CN [meso-Tetraphenylporphinato(2-)]nickel

MF C44 H28 N4 Ni

CI CCS, COM

LC STN Files: AGRICOLA, BIOSIS, CA, CAPLUS, CASREACT, CHEMCATS,  
 CHEMINFORMRX, CSCHEM, DETHERM\*, GMELIN\*, IFICDB, IFIPAT, IFIUDB,  
 MEDLINE, MSDS-OHS, TOXCENTER, USPAT2, USPATFULL, USPATOLD  
 (\*File contains numerically searchable property data)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

451 REFERENCES IN FILE CA (1907 TO DATE)  
 2 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 452 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 9 OF 11 REGISTRY COPYRIGHT 2010 ACS on STN

RN 7789-24-4 REGISTRY

ED Entered STN: 16 Nov 1984

CN Lithium fluoride (LiF) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Lithium fluoride (7CI, 8CI)

OTHER NAMES:

CN LFDNB

CN Lithium monofluoride

CN Lithium monofluoride (LiF)

CN NSC 12957

CN NTL 50

CN PTL 710

CN TLD 100

DR 12285-65-3, 64975-45-7, 40619-18-9

MF F Li

CI COM

LC STN Files: AGRICOLA, ANABSTR, BIOSIS, BIOTECHNO, CA, CAPLUS, CASREACT,  
 CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DETHERM\*,  
 EMBASE, GMELIN\*, HSDB\*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MRCK\*,  
 MSDS-OHS, PIRA, PROMT, RTECS\*, TOXCENTER, TULSA, USPAT2, USPATFULL,  
 USPATOLD

(\*File contains numerically searchable property data)

Other Sources: DSL\*\*, EINECS\*\*, TSCA\*\*

(\*\*Enter CHEMLIST File for up-to-date regulatory information)

F—Li

\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

23515 REFERENCES IN FILE CA (1907 TO DATE)  
159 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
23732 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 10 OF 11 REGISTRY COPYRIGHT 2010 ACS on STN  
RN 7429-90-5 REGISTRY  
ED Entered STN: 16 Nov 1984  
CN Aluminum (CA INDEX NAME)

OTHER NAMES:

CN 0100MSR  
CN 0670TS  
CN 0870MSO  
CN 0900X  
CN 1001M  
CN 102B  
CN 102C  
CN 1100H24  
CN 1100P-H18  
CN 1110W  
CN 130W  
CN 13T  
CN 1440YL  
CN 1N99  
CN 2024PLT0  
CN 20B2C-M  
CN 20M2S  
CN 210EA  
CN 350D  
CN 350F  
CN 40XD  
CN 4690NS  
CN 5207N  
CN 5422NS  
CN 5501N  
CN 5502N  
CN 5502SW  
CN 550N  
CN 561SW  
CN 5654NS  
CN 5N  
CN 5XD  
CN 6050T5  
CN 66NLB  
CN 7000AR  
CN 7160nl-NW  
CN 716ON  
CN 723BS150  
CN 725EA  
CN 725N  
CN 7620NS  
CN 7640NS  
CN 7680NS  
CN 770SW  
CN 8011A  
CN 804NL  
CN 8F02A  
CN 900M  
CN 91-2343T  
CN 930W

ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT - Use FCN, FIDE, or ALL for  
DISPLAY

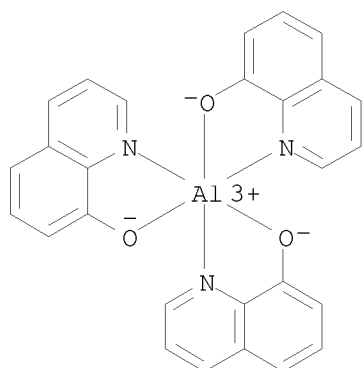
DR 12766-45-9, 113962-66-6, 37202-64-5, 80341-19-1, 91728-14-2, 39302-71-1,  
39332-62-2, 182260-45-3, 185464-37-3, 257888-99-6, 298688-47-8  
MF Al  
CI COM  
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BIOSIS, BIOTECHNO, CA,  
CABA, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST,  
CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM\*, DRUGU, EMBASE, ENCOMPLIT,  
ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, HSDB\*, IFICDB, IFIPAT, IFIUDB, IPA,  
MEDLINE, MRCK\*, MSDS-OHS, PIRA, PROMT, RTECS\*, TOXCENTER, TULSA, ULIDAT,  
USPAT2, USPATFULL  
(\*File contains numerically searchable property data)  
Other Sources: DSL\*\*, EINECS\*\*, TSCA\*\*  
(\*Enter CHEMLIST File for up-to-date regulatory information)

Al

\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

466494 REFERENCES IN FILE CA (1907 TO DATE)  
14964 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
468471 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 11 OF 11 REGISTRY COPYRIGHT 2010 ACS on STN  
RN 2085-33-8 REGISTRY  
ED Entered STN: 16 Nov 1984  
CN Aluminum, tris(8-quinolinolato-κN1,κO8)- (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN Aluminum, tris(8-quinolinolato)- (6CI, 7CI, 8CI)  
CN Aluminum, tris(8-quinolinolato-N1,O8)-  
OTHER NAMES:  
CN 8-Hydroxyquinoline aluminum  
CN Al 8Q  
CN Alq  
CN Alq3  
CN Aluminum 8-hydroxyquinolate  
CN Aluminum oxinate  
CN Aluminum tris(8-hydroxyquinolate)  
CN Aluminum tris(8-quinolinolate)  
CN Aluminum, tris(8-hydroxyquinolinato)-  
CN Hydroxyquinoline aluminum  
CN Tri-8-quinolinolatoaluminum  
CN Tris(8-hydroxyquinolato)aluminum  
CN Tris(8-hydroxyquinolate)aluminum  
CN Tris(8-hydroxyquinolinato)aluminum  
CN Tris(8-hydroxyquinolinol-N1,O8)aluminum  
CN Tris(8-quinolinol)aluminum  
CN Tris(8-quinolinolato)aluminum  
CN Tris(8-quinolinolato)aluminum(III)  
CN Tris-(8-hydroxyquinoline)aluminum  
DR 11094-99-8, 24731-66-6  
MF C27 H18 Al N3 O3  
CI CCS, COM  
LC STN Files: AGRICOLA, BEILSTEIN\*, CA, CAPLUS, CASREACT, CHEMCATS,  
CHEMLIST, CSCHEM, GMELIN\*, IFICDB, IFIPAT, IFIUDB, MRCK\*, PIRA, RTECS\*,  
TOXCENTER, USPAT2, USPATFULL, USPATOLD  
(\*File contains numerically searchable property data)  
Other Sources: EINECS\*\*  
(\*Enter CHEMLIST File for up-to-date regulatory information)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

9148 REFERENCES IN FILE CA (1907 TO DATE)  
 41 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 9340 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> FIL REGISTRY

COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	24.08	30.70
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	0.00	-0.85

FILE 'REGISTRY' ENTERED AT 12:00:07 ON 09 APR 2010  
 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
 PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
 COPYRIGHT (C) 2010 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file  
 provided by InfoChem.

STRUCTURE FILE UPDATES: 7 APR 2010 HIGHEST RN 1217434-06-4  
 DICTIONARY FILE UPDATES: 7 APR 2010 HIGHEST RN 1217434-06-4

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH January 8, 2010.

Please note that search-term pricing does apply when  
 conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and  
 predicted properties as well as tags indicating availability of  
 experimental property data in the original document. For information  
 on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stndoc/properties.html>

=> SET TERMSET E#

SET COMMAND COMPLETED

=> DEL SEL Y

=> SEL L2 1 RN

E1 THROUGH E1 ASSIGNED

=> S E1/RN

L3 1 790273-07-3/RN

=> SET TERMSET LOGIN

SET COMMAND COMPLETED

=> FIL CAPLUS

COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	0.59	31.29
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	0.00	-0.85

FILE 'CAPLUS' ENTERED AT 12:00:11 ON 09 APR 2010  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
COPYRIGHT (C) 2010 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 9 Apr 2010 VOL 152 ISS 16  
FILE LAST UPDATED: 8 Apr 2010 (20100408/ED)  
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Feb 2010  
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Feb 2010

CAPLUS now includes complete International Patent Classification (IPC) reclassification data for the first quarter of 2010.

CAS Information Use Policies apply and are available at:

<http://www.cas.org/legal/infopolicy.html>

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> S L3

L4 11 L3

=> S L4 AND 1950<=PY<=2004  
23321913 1950<=PY<=2004

L5 2 L4 AND 1950<=PY<=2004

=> DIS L5 1 IBIB IABS

THE ESTIMATED COST FOR THIS REQUEST IS 3.10 U.S. DOLLARS  
DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N:Y

L5 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2005:656260 CAPLUS

DOCUMENT NUMBER: 143:275223

TITLE: Tetra-substituted pyrenes: new class of blue emitter  
for organic light-emitting diodes

AUTHOR(S): Sotoyama, Wataru; Sato, Hiroyuki; Kinoshita, Masaru;  
Takahashi, Toshiro; Matsuura, Azuma; Kodama, Jun;  
Sawatari, Norio; Inoue, Hiroshi

CORPORATE SOURCE: Functional Organic Materials Laboratory, Fujitsu  
Laboratories Limited, Morinosato-Wakamiya, Atsugi,  
243-0197, Japan

SOURCE: Digest of Technical Papers - Society for Information  
Display International Symposium (2003), 34,  
1294-1297

CODEN: DTPSDS

PUBLISHER: Society for Information Display

DOCUMENT TYPE: Journal; (computer optical disk)

LANGUAGE: English

ABSTRACT:

We have developed a new class of highly-fluorescent blue emitter for organic light-emitting diodes (OLEDs) consisting of tetra-substituted pyrenes. From the anal. of the excited state diagrams of pyrene and its derivs. by MO calcns., we found that the new tetra-substituted pyrenes are highly fluorescent. OLEDs fabricated using the synthesized tetra-substituted pyrenes as emitters showed high efficiency and good color purity.

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD  
(3 CITINGS)

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> DIS L5 2 IBIB IABS

THE ESTIMATED COST FOR THIS REQUEST IS 3.10 U.S. DOLLARS  
DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N:Y

L5 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2004:965354 CAPLUS

DOCUMENT NUMBER: 141:403312

TITLE: 1,3,6,8-Tetrasubstituted pyrene compounds, organic  
electroluminescent device and organic  
electroluminescent display

INVENTOR(S): Sotoyama, Wataru; Sato, Hiroyuki; Matsuura, Azuma;  
Kinoshita, Masaru; Takahashi, Toshiro

PATENT ASSIGNEE(S): Fujitsu Limited, Japan

SOURCE: PCT Int. Appl., 67 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:



PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004096945	A1	20041111	WO 2003-JP5577	20030501 <--
W: JP, US				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR				
EP 1621597	A1	20060201	EP 2003-721011	20030501
R: DE, GB				
US 20050238920	A1	20051027	US 2005-166692	20050627
PRIORITY APPLN. INFO.:			WO 2003-JP5577	W 20030501
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT				

# ABSTRACT:

The invention refers to an organic electroluminescent device containing, as a luminescent material, a 1,3,6,8-tetrasubstituted pyrene compound wherein the substituents are Ph rings with at least one substituted aryl as a substituent.

OS.CITING REF COUNT: 8 THERE ARE 8 CAPLUS RECORDS THAT CITE THIS RECORD (15 CITINGS)

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> FIL REGISTRY

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	10.51	41.80
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-1.70	-2.55

FILE 'REGISTRY' ENTERED AT 12:02:27 ON 09 APR 2010  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
COPYRIGHT (C) 2010 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 7 APR 2010 HIGHEST RN 1217434-06-4  
DICTIONARY FILE UPDATES: 7 APR 2010 HIGHEST RN 1217434-06-4

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH January 8, 2010.

Please note that search-term pricing does apply when conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stndoc/properties.html>

=> SET TERMSET E#

SET COMMAND COMPLETED

=> DEL SEL Y

=> SEL L2 7 RN

E1 THROUGH E1 ASSIGNED

=> S E1/RN

L6 1 28755-93-3/RN

=> SET TERMSET LOGIN

SET COMMAND COMPLETED

=> FIL CAPLUS

COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	0.59	42.39
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	0.00	-2.55

FILE 'CAPLUS' ENTERED AT 12:02:31 ON 09 APR 2010  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
COPYRIGHT (C) 2010 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 9 Apr 2010 VOL 152 ISS 16  
FILE LAST UPDATED: 8 Apr 2010 (20100408/ED)  
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Feb 2010  
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Feb 2010

CAPLUS now includes complete International Patent Classification (IPC) reclassification data for the first quarter of 2010.

CAS Information Use Policies apply and are available at:

<http://www.cas.org/legal/infopolicy.html>

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> S L6

L7 213 L6

=> S L7 AND 2002<=PY<=2003  
2314925 2002<=PY<=2003  
L8 9 L7 AND 2002<=PY<=2003

=> DIS L8 1 IBIB IABS  
THE ESTIMATED COST FOR THIS REQUEST IS 3.10 U.S. DOLLARS  
DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N:Y

L8 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2004:345282 CAPLUS  
DOCUMENT NUMBER: 142:189724  
TITLE: Metalloporphyrins thin films sensors array equipped  
with backpropagation network for vapor recognition  
AUTHOR(S): Akrajas; Salleh, Muhamad Mat; Yahaya, Muhammad  
CORPORATE SOURCE: School of Applied Physics, Faculty of Science and  
Technology, Universiti Kebangsaan Malaysia, Selangor,  
Malay.  
SOURCE: Proceedings - IEEE International Conference on  
Semiconductor Electronics, 5th, Penang, Malaysia, Dec.  
19-21, 2002 (2002), 115-120. Editor(s):  
Shaari, Sahbudin; Majlis, Burhanuddin Yeop. Institute  
of Electrical and Electronics Engineers: New York, N.  
Y.  
CODEN: 69FHQV; ISBN: 0-7803-7578-5  
DOCUMENT TYPE: Conference  
LANGUAGE: English  
ABSTRACT:

This work reports the fabrication of an array of sensors system equipped with a pattern recognition system to classify four types of vapor samples; 2-propanol, ethanol, acetone and cyclohexane. The array comprises eight metalloporphyrins derivs. thin films as sensing element. A backpropagation artificial neural network was used as pattern classifier. The presentation of a vapor sample towards the sensing elements produced the response pattern which was considered as the vapor finger print. A library of the vapor pattern which was introduced to the sensing elements was built up. The pattern was then labeled and introduced to the neural network. After proper learning, the network was tried to recognize the vapor pattern. The recognition results indicated that the system was able to recognize the sample with the overall system performance is 0.75.

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> DIS L8 2 IBIB IABS  
THE ESTIMATED COST FOR THIS REQUEST IS 3.10 U.S. DOLLARS  
DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N:Y

L8 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2003:894126 CAPLUS  
DOCUMENT NUMBER: 140:245212  
TITLE: EPR and Moessbauer characterization of Fe(III)- and  
Fe(I)-azaporphyrins and comparison to related iron  
porphyrins  
AUTHOR(S): Dzilinski, K.; Kaczmarzyk, T.; Jackowski, T.;  
Sinyakov, G. N.; Egorova, G. D.  
CORPORATE SOURCE: Institute of Physics, Czestochowa University of  
Technology, Czestochowa, 42-200, Pol.  
SOURCE: Molecular Physics Reports (2003), 37, 35-41  
CODEN: MPREFZ; ISSN: 1505-1250  
PUBLISHER: Osrodek Wydawnictw Naukowych, Polish Academy of

Sciences  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
ABSTRACT:

A spectroscopic comparative study of Fe(III)- and Fe(I)-porphyrins with unsubstituted methine bridges CH at meso positions of the porphyrin ring (octaethylporphyrin) and successively substituted by N atoms (monoaza-, diaza-, tetraazaporphyrins and phthalocyanine) was carried out using the ESR and Moessbauer methods. The increase of a number of N atoms at meso positions changes the character of quantum-mech. mixed spin state of Fe(III) ions ( $S = 5/2, 3/2$ ) by the increase of the intermediate-spin ( $S = 3/2$ ) contribution. ESR spectrum of Fe(III)(Cl)-diazaoctaethylporphyrin in THF solution exhibits 2 kinds of hyperfine splittings which were assigned to porphyrin-solvent mol. interactions. Electron configuration of Fe(I) ion in azaporphyrins corresponds to the low-spin state ( $S = 1/2$ ) as in the case of Fe(I)-octaethylporphyrin with the unsubstituted meso positions.

OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)  
REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> DIS L8 3 IBIB IABS  
THE ESTIMATED COST FOR THIS REQUEST IS 3.10 U.S. DOLLARS  
DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N:Y

L8 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2003:727767 CAPLUS  
DOCUMENT NUMBER: 139:371115  
TITLE: Determination of the Complete Set of Iron Normal Modes in the Heme Model Compound FeIII(OEP)Cl from Nuclear Resonance Vibrational Spectroscopic Data  
AUTHOR(S): Budarz, Timo E.; Prohofsky, E. W.; Durbin, Stephen M.; Sjodin, Theodore; Sage, J. Timothy; Sturhahn, Wolfgang; Alp, E. Ercan  
CORPORATE SOURCE: Department of Physics, Purdue University, West Lafayette, IN, 47907, USA  
SOURCE: Journal of Physical Chemistry B (2003), 107(40), 11170-11177  
CODEN: JPCBFK; ISSN: 1520-6106  
PUBLISHER: American Chemical Society  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
ABSTRACT:

The vibrational spectrum of  $^{57}\text{Fe}$  in chloro Fe octaethylporphyrin, Fe(OEP)Cl, was calculated by normal-mode anal. refined to absorption data from nuclear resonance vibrational spectroscopy. This technique directly measures the amplitudes and frequencies for all modes that have significant Fe participation, providing rigorous constraints to the best-fit values for the force consts. The calculated normal modes reveal the importance of Fe displacements perpendicular to the heme plane for both the lowest frequency modes and the ligand modes. The actual normal modes of Fe(OEP)Cl are not well described by single modes of the core porphyrin; instead they are hybrids of multiple core modes and Et and chlorine displacements.

OS.CITING REF COUNT: 9 THERE ARE 9 CAPLUS RECORDS THAT CITE THIS RECORD (9 CITINGS)  
REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> DIS L8 4 IBIB IABS  
THE ESTIMATED COST FOR THIS REQUEST IS 3.10 U.S. DOLLARS  
DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N:Y

L8 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2003:545252 CAPLUS

DOCUMENT NUMBER: 139:254272

TITLE: Effect of the Sixth Axial Ligand in CS-Ligated  
Iron(II)octaethylporphyrinates: Structural and  
Mossbauer Studies

AUTHOR(S): Cao, Changsheng; Dahal, S.; Shang, Mayou; Beatty,  
Alicia M.; Hibbs, Wendy; Schulz, Charles E.; Scheidt,  
W. Robert

CORPORATE SOURCE: Department of Chemistry and Biochemistry, University  
of Notre Dame, Notre Dame, IN, 46556, USA

SOURCE: Inorganic Chemistry (2003), 42(17),  
5202-5210

CODEN: INOCAJ; ISSN: 0020-1669

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 139:254272

ABSTRACT:

The effect of a 6th ligand in low-spin thiocarbonyl-ligated Fe(II) octaethylporphyrinates was studied. Six-coordinate complexes were synthesized and characterized by Mossbauer and IR spectroscopy and single-crystal x-ray structure detns. The results are compared with the five-coordinate parent complex. The crystal structures of [Fe(OEP)(CS)(1-MeIm)] and [Fe(OEP)(CS)(Py)] are reported and discussed. The 1-methylimidazole and pyridine derivs. exhibit Fe-C(CS) bond distances of 1.703(4) and 1.706(2) Å that are significantly longer than the 1.662(3) Å reported for five-coordinate [Fe(OEP)(CS)] (Scheidt, W. R.; Geiger, D. K. Inorg. Chemical 1982, 21, 1208). The trans Fe-N(ligand) distances of 2.112(3) and 2.1550(15) Å observed for the 1-methylimidazole and pyridine complex are .apprx.0.13 Å longer than those observed for analogous bis-ligated complexes and are consistent with a significant structural trans effect for the CS ligand. Mossbauer studies carried out for five- and six-coordinate thiocarbonyl derivs. with several different 6th axial ligands reveal interesting features. All derivs. exhibit very small isomer shift values, consistent with a very strong interaction between Fe and CS. The five-coordinate derivative has  $\delta\text{Fe} = 0.08$  mm/s, and the six-coordinate complexes exhibit  $\delta\text{Fe} = 0.14$  to 0.19 mm/s at 4.2 K. The five-coordinate complex shows a large quadrupole splitting ( $\Delta E_q = 1.93$  mm/s at 4.2 K) which is reduced on coordination of the 6th ligand ( $\Delta E_q = 0.42$ -0.80 mm/s at 4.2 K). Addition of a 6th ligand also leads to a small decrease in the value of  $\nu\text{CS}$ . Correlations in structural, IR, and Mossbauer results suggest that the 6th ligand effect is primarily induced by changes in  $\sigma$ -bonding. The structure of [Fe(OEP)(CS)(MeOH)] is briefly reported. Crystal data: [Fe(OEP)(CS)(1-MeIm)] crystallizes in the monoclinic system, space group P21/n, Z = 4, a 9.5906(5), b 16.704(4), c 23.1417(6) Å,  $\beta$  100.453(7)°; [Fe(OEP)(CS)(Py)] crystallizes in the triclinic system, space group P.hivin.1, Z = 5, a 13.9073(6), b 16.2624(7), c 22.0709(9) Å,  $\alpha$  70.586(1),  $\beta$  77.242(1),  $\gamma$  77.959(1)°; [Fe(OEP)(CS)(MeOH)] crystallizes in the triclinic system, space group P.hivin.1, Z = 1, a 9.0599(5), b 9.4389(5), c 11.0676(6) Å,  $\alpha$  90.261(1),  $\beta$  100.362(1),  $\gamma$  114.664(1)°.

OS.CITING REF COUNT: 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD  
(7 CITINGS)

REFERENCE COUNT: 76 THERE ARE 76 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> DIS L8 5 IBIB IABS  
THE ESTIMATED COST FOR THIS REQUEST IS 3.10 U.S. DOLLARS  
DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N:Y

L8 ANSWER 5 OF 9 CAPLUS COPYRIGHT 2010 ACS on STN  
ACCESSION NUMBER: 2003:448574 CAPLUS  
DOCUMENT NUMBER: 139:342863  
TITLE: Effect of the solvent on electronic absorption and EPR spectra of a reduced form of Fe(I)-octaethylporphyrins  
AUTHOR(S): Kaczmarzyk, Tomasz; Dzilinski, Kazimierz  
CORPORATE SOURCE: Inst. Fiz., Wydz. Inz. Procesowej, Mater. i Fiz. Stosowanej, Politech. Czestochowska, Czestochowa, Pol.  
SOURCE: Nowe Technologie i Osiagniecia w Metalurgii i Inzynierii Materialowej, Miedzynarodowa Sesja Naukowa, 3rd, Czestochowa, Poland, May, 2002 (2002), 401-405. Wydawnictwo Wydzialu Inzynierii Procesowej, Materialowej i Fizyki Stosowanej Politechniki Czestochowskiej: Czestochowa, Pol.  
CODEN: 69EAKX; ISBN: 83-87745-51-0  
DOCUMENT TYPE: Conference  
LANGUAGE: Polish  
ABSTRACT: The results obtained from electronic absorption and EPR spectroscopies for Fe(I)OEP in THF and DME solns. are considered. Mols. of solvent interact with the Fe(I)OEP complex through  $\pi$ -orbitals which overlap THF mols.

=> DIS L8 6 IBIB IABS  
THE ESTIMATED COST FOR THIS REQUEST IS 3.10 U.S. DOLLARS  
DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N:Y

L8 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2010 ACS on STN  
ACCESSION NUMBER: 2003:365424 CAPLUS  
DOCUMENT NUMBER: 139:42165  
TITLE: Symmetry and Bonding in Metalloporphyrins. A Modern Implementation for the Bonding Analyses of Five- and Six-Coordinate High-Spin Iron(III)-Porphyrin Complexes through Density Functional Calculation and NMR Spectroscopy  
AUTHOR(S): Cheng, Ru-Jen; Chen, Ping-Yu; Lovell, Timothy; Liu, Tiqing; Noodleman, Louis; Case, David A.  
CORPORATE SOURCE: Department of Chemistry, National Chung-Hsing University, Taichung, 402, Taiwan  
SOURCE: Journal of the American Chemical Society (2003), 125(22), 6774-6783  
CODEN: JACSAT; ISSN: 0002-7863  
PUBLISHER: American Chemical Society  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
ABSTRACT: Bonding interactions between the iron and the porphyrin macrocycle of five- and six-coordinate high-spin iron(III)-porphyrin complexes are analyzed within the framework of approx. d. functional theory with the use of the quant. energy decomposition scheme in combination with removal of the vacant  $\pi^*$  orbitals of the porphyrin from the valence space. Although the relative extent of the iron-porphyrin interactions can be evaluated qual. through the spin population and orbital contribution analyses, the bond strengths corresponding to different symmetry representations can be only approximated quant. by the

orbital interaction energies. In contrast to previous suggestions, there are only limited Fe  $\rightarrow$  P  $\pi^*$  back-bonding interactions in high-spin iron(III)-porphyrin complexes. It is the symmetry-allowed bonding interaction between dz<sup>2</sup> and a<sub>2u</sub> orbitals that is responsible for the pos.  $\pi$  spin densities at the meso-carbons of five-coordinate iron(III)-porphyrin complexes. Both five- and six-coordinate complexes show significant P  $\rightarrow$  Fe  $\pi$  donation, which is further enhanced by the movement of the metal toward the in-plane position for six-coordinate complexes. These bonding characteristics correlate very well with the NMR data reported exptl. The extraordinary bonding interaction between dz<sup>2</sup> and a<sub>2u</sub> orbitals in five-coordinate iron(III)-porphyrin complexes offers a novel symmetry-controlled mechanism for spin transfer between the axial ligand  $\sigma$  system and the porphyrin  $\pi$  system and may be critical to the electron transfer pathways mediated by hemoproteins.

OS.CITING REF COUNT: 45 THERE ARE 45 CAPLUS RECORDS THAT CITE THIS RECORD (45 CITINGS)  
REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> DIS L8 7 IBIB IABS  
THE ESTIMATED COST FOR THIS REQUEST IS 3.10 U.S. DOLLARS  
DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N:Y

L8 ANSWER 7 OF 9 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2002:498980 CAPLUS

DOCUMENT NUMBER: 137:256985

TITLE: Enriching the selectivity of metalloporphyrins

chemical sensors by means of optical technique

AUTHOR(S): Akrajas, M.; Mat Salleh, Muhamad; Yahaya, Muhammad

CORPORATE SOURCE: Faculty of Science and Technology, School of Applied Physics, Universiti Kebangsaan Malaysia, Selangor, 43600 UKM, Malay.

SOURCE: Sensors and Actuators, B: Chemical (2002), B85(3), 191-196

CODEN: SABCEB; ISSN: 0925-4005

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

ABSTRACT:

In the electronic nose, the sensing elements must demonstrate high selectivity feature toward various kinds of gases. This paper reports the use of the optical technique to enrich the selectivity of four metallo-octaethyl porphyrins (with the metal atoms of Mn, Fe, Co and Ru) Langmuir-Blodgett (LB) films toward four vapor samples; 2-propanol, ethanol, acetone and cyclohexane. The optical system was developed using these materials as sensing elements and four LED's of different colors; red, yellow, green and blue, as light sources. The sensing sensitivity was based on the change on the light intensity at the peak wavelength of light sources after being reflected by the films. The sensitivity of the films depends on the wavelength of the light source used and the metal atom at the center of the metalloporphyrins mols. Each thin film produced four response signals or 16 signals for the whole system for a particular vapor. These 16 signals constituted the pattern of the signature of a vapor. The signature of each vapor is different from each other. This work indicated that the amount of the sensing elements used to create a high selectivity gas sensor system may be reduced.

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)  
REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> DIS L8 8 IBIB IABS

THE ESTIMATED COST FOR THIS REQUEST IS 3.10 U.S. DOLLARS

DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N:Y

L8 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2002:80911 CAPLUS

DOCUMENT NUMBER: 136:288162

TITLE: meso Substituent Effects on the Geometric and Electronic Structures of High-Spin and Low-Spin Iron(III) Complexes of Mono-meso-Substituted Octaethylporphyrins

AUTHOR(S): Kalish, Heather; Camp, Jason E.; Stepien, Marcin; Latos-Grazynski, Lechoslaw; Olmstead, Marilyn M.; Balch, Alan L.

CORPORATE SOURCE: Departments of Chemistry, University of California, Davis, CA, 95616, USA

SOURCE: Inorganic Chemistry (2002), 41(4), 989-997  
CODEN: INOCAJ; ISSN: 0020-1669

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

ABSTRACT:

Introduction of a single meso substituent into ClFeIII(OEP) or K[(NC)2Fe(OEP)] results in significant changes in the geometric and/or spectroscopic properties of these complexes. The mono-meso-substituted iron(III) complexes ClFeIII(meso-Ph-OEP), ClFeIII(meso-Bu-OEP), ClFeIII(meso-MeO-OEP), ClFeIII(meso-Cl-OEP), ClFeIII(meso-NC-OEP), ClFeIII(meso-HC(O)-OEP), and ClFeIII(meso-O2N-OEP) were isolated and characterized by their UV/visible and paramagnetically shifted 1H NMR spectra. The structures of both ClFeIII(meso-Ph-OEP) and ClFeIII(meso-NC-OEP) were determined by x-ray crystallog. Both mols. have five-coordinate structures typical for high-spin ( $S = 5/2$ ) iron(III) complexes. However, the porphyrins themselves no longer have the domed shape seen in ClFeIII(OEP), and the N4 coordination environment possesses a slight rectangular distortion. These high-spin, mono-meso-substituted iron(III) complexes display 1H NMR spectra in chloroform-d solution which indicate that the conformational changes seen in the solid-state structures are altered by normal mol. motion to produce spectra consistent with Cs mol. symmetry. In pyridine solution the high-spin six-coordinate complexes {(py)ClFeIII(meso-R-OEP)} form. In methanol solution in the presence of excess potassium cyanide, the low-spin six-coordinate complexes K[(NC)2FeIII(meso-R-OEP)] form. The 1H NMR spectra of these show that electron-donating substituents produce an upfield relocation of the meso-proton chemical shifts. This relocation is interpreted in terms of increased contribution from the less common (dxz,dyz)4(dxy)1 ground electronic state as the meso substituent becomes more electron donating.

OS.CITING REF COUNT: 16 THERE ARE 16 CAPLUS RECORDS THAT CITE THIS RECORD (16 CITINGS)

REFERENCE COUNT: 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> DIS L8 9 IBIB IABS

THE ESTIMATED COST FOR THIS REQUEST IS 3.10 U.S. DOLLARS

DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N:Y

L8 ANSWER 9 OF 9 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2002:44832 CAPLUS

DOCUMENT NUMBER: 136:285734



TITLE: Electrochemistry and spectroscopy of sulfate and  
thiosulfate complexes of iron porphyrins  
AUTHOR(S): Crawford, Philip W.; Ryan, Michael D.  
CORPORATE SOURCE: Department of Chemistry, Marquette University,  
Milwaukee, WI, 53201-1881, USA  
SOURCE: Inorganica Chimica Acta (2002), 328, 13-22  
CODEN: ICHAA3; ISSN: 0020-1693  
PUBLISHER: Elsevier Science S.A.  
DOCUMENT TYPE: Journal  
LANGUAGE: English

ABSTRACT:

The electrochem. and spectroscopic properties of the complex formed by the addition of thiosulfate to ferric porphyrins were examined. The NMR spectrum of the thiosulfate-ferric porphyrin complex was consistent with a high-spin ferric complex, while the EPR spectrum at liquid nitrogen temps. indicated that the complex under these conditions was low-spin. Such behavior has been previously observed for other ferric porphyrin complexes. The visible spectra were characterized by a shift in the Soret band to higher energies, with smaller changes in the longer wavelength region. The complex was reasonably stable in DMF, but slowly reduced over several hours to FeII(TPP) and S4O6 2-. The voltammetric behavior of the thiosulfate complex in DMF consists of two waves, the first of which was irreversible. The ferric/ferrous reduction in the presence of thiosulfate was shifted neg. about 400 mV, compared to the Fe(TPP)(Cl) reduction. The visible, NMR and EPR spectra were most consistent with a Fe-S bonded ferric porphyrin-thiosulfate complex, Fe(P)(S-SO3)-. The kinetics of the reduction of ferric porphyrin by thiosulfate in DMSO indicated an autocatalytic mechanism, where the first step is the formation of the catalyst. The identity of the catalyst could not be determined because it must be present at low concns., but it is formed from the reaction of the ferric complex with thiosulfate. Coordination of thiosulfate to the porphyrin was not necessary for the reduction to occur, and the reduction of Fe(TPP)(Cl) by thiosulfate was accelerated by the addition of sulfate. Under these conditions, sulfate had replaced thiosulfate as the axial ligand for the ferric porphyrin. In the presence of sulfate, the reduction occurred in a single kinetic pseudo-first order step.

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD  
(3 CITINGS)  
REFERENCE COUNT: 59 THERE ARE 59 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT